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EXAMINER	
CHUMPITAZ, BOB R	

ART UNIT	PAPER NUMBER
3629	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/687,224	SHAO-CHI ET AL.	
	Examiner	Art Unit	
	BOB CHUMPITAZ	3629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 February 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-6,9-12,14-19 and 21-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 3-6, 9-12, 14-19, 21-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

The following is a Non-Final Office action in response to communications received 2/18/2009. Claims 1, 3-6 and 9-12 have been amended. Claims 2, 7, 8, 13 and 20 have been canceled. Therefore, claims 1, 3-6, 9-12, 14-19 and 23-24 are pending and addressed below.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 3-6, 9-12, 14-19 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yang et al. (US 2003/0233290 A1, hereinafter Yang) in view of Hagen et al. (US 6,748,287 B1, hereinafter Hagen).

As per claim 1, Yang discloses a system comprising:

> a first computer system associated with maintaining a primary provider and a second computer system associated with a secondary provider ((Abstract) a global supply chain management system in an environment of multiple suppliers forming supply chains for one or more buyers connected over the internet; [paragraph] [0027, 50] Fig. 1 depicts a plurality of supply chain management systems; [0070, 73] Fig. 9 computer system network for the supply chain management system; see also Figs. 9-11 systems for supply management)

wherein the first computer system and the second computer system are operably coupled to a first network providing for an exchange of information, the information pertaining to the semiconductor-related product ([0015, 25] global processor provides reports for numerous data types including activity-based transaction reports including detail for each buyer and supplier stage; [0050] Fig. 1 depicts a supply chain management system serving all the multiple buyers and the multiple suppliers; where the multiple buyers and multiple suppliers are connected over the internet and hence are able to exchange supply chain information rapidly and essentially in real time; [0070] a two-way communication redundancy process for providing services to the buyers and suppliers (clients) via a network; [0073] database holding information using the supply chain management system; see also, claim 2: maintaining information in supply chain management system);

Yang does not explicitly disclose wherein the first computer system performs:
"assigning a predetermined event element to the semiconductor-related product at the secondary provider, wherein the predetermined event element includes a product-specific process parameter", "collecting the exchanged information" and "collecting event information upon an occurrence of a predetermined event element associated with the semiconductor-related product".

However, Yang discloses a semiconductor manufacturing environment for manufacturing a wafer lot, that include processing stages of Fab, Wafer Sort, Assembly and Final Test, each performed by a supplier and authorized and controlled by purchase orders. In FIG.

5, the set of purchase orders [P,,,S,, P,,,S,, P,,,S,, P,,,S,] relate to interdependent work steps. The output, O,, is only obtained when all of the orders [P,,,S,, P,,,S,, P,,,S,, P,,,S,] have been executed according to their terms and in sequence from the most upstream order P,,,S, in turn through the orders P,,,S,, P,,,S, to the most downstream order P,,,S,. Furthermore, the downstream orders depend upon the performance of the upstream orders [0059]. In addition, Hagen teaches an adaptive real-time work in progress tracking, prediction, and optimization system for a semiconductor supply chain. Hagen also teaches coordinating operations of a semiconductor supply chain with multiple vendors; where each vendor performs tasks before handing off product to next vendor. The tasks may be manufacturing, service, or other tasks. Each task performed by the supply chain vendor may be a combination of multiple steps (e.g., task 1 contains steps s1, s2, s3…s120) (col. 4, lines 41- col. 5, line 61; see also Fig.1 and associated text). Hagen also teaches, generating an advance notice and making them available to a downstream vendor based on the updated data representation and a pre-determined rule (Claims 2, 11). Furthermore, Hagen teaches work in process (WIP) tracking system database; where the WIP database stores a data representation of the semiconductor supply chain, including the current status of WIP in the supply chain (col. 10, lines 6-34). Lastly, Hagen teaches where the WIP tracking system is controlled by a fabless semiconductor provider, the fabless semiconductor provider may follow an ASIC, ASSP or other business model. The fabless semiconductor provider coordinates with the supply chain vendors to establish WIP tracking system protocols, such as contents, format and frequency of WIP updates, the manner to identify individual units of products on the

supply chain, etc. The protocols may be simple or complex and may differ from one vendor to the next. Ideally, all vendors would use a common protocol which is directly compatible with the WIP tracking system. In reality, however, each vendor may dictate its own protocol (col. 7, lines 47-63). The Examiner considers the method for communicating with the WIP system by each individual vendor to be performed via an individual in-house business system which being well known and would have been obvious to one of ordinary skill in the art at the time of the invention in order to provide an information channel between vendors and customers in the supply chain system. It would also have been obvious to one of ordinary skill in the art at the time of the invention to modify the supply chain management system for semiconductor manufacturing, comprising suppliers for each manufacturing stage as disclosed by Yang to include event elements tasks for the semiconductor supply chain taught by Hagen in order to assign all the required event elements require for completing a stage of the semiconductor manufacturing process in an efficient and effective manner and in order to optimize the supply chain management process by reducing the impact caused by any unpredictable incidents or errors occurring in the other supply chain which will therefore reduce the semiconductor manufacturing cycle time.

Yang further discloses providing the collected exchanged information and the collected event information to a customer associated with the semiconductor-related product ([0050] multiple buyers and multiple suppliers are connected over the internet and hence are able to exchange supply information rapidly and essentially in real time; [0072] the

processed data is stored in the processed data store which can be communicated to the clients; [0093] reports that show work in progress information; [0186] buyer request).

As per claim 3, Yang further discloses wherein the first and second computer systems are operably coupled by a first network for exchanging information between the primary and secondary providers, and the providing the collected exchanged information and the collected event information uses a second network, different from the first network ([0035, 53] hardware block diagram of a computer system network for the supply chain management system; see Fig. 9 and associated text; [0070] computer system network; [0072] the processed data is stored in the processed data store which can be communicated to the clients; [0186] buyer request; see also Figs. 1, 9 computer system network).

As per claim 4, Yang further discloses wherein the exchange of information uses a dedicated bi-directional path of the first network, and wherein the collecting the exchanged information provides continuously collecting the exchanged information ([0015] continuously updated data base; [0050] multiple buyers and multiple suppliers are connected over the internet and hence are able to exchange supply information rapidly and essentially in real time; [0070, 208] supply chain management services to the buyers and suppliers in a network via internet connection).

As per claim 5, Yang further discloses an enterprise control system that includes a customer interface in the form of a web browser, wherein the enterprise control system receives the collected exchanged information and the collected event information from the first computer

system ([0061, 64, 68] each of the suppliers receive "current" and accurate information from upstream suppliers through use of communications; [0070] supply chain management service; [0179] onscreen operations or other i-commerce methods of communication provided to buyers and suppliers).

As per claim 6, Yang discloses a method of business-to-business exchange between providers in a semiconductor manufacturing environment, the method comprising:

> exchanging a product from a primary provider to a secondary provider, wherein the primary provider is a semiconductor fab and the product is a lot of semiconductor wafers ([0009] in order to have efficient and economical supply chain management, the interrelationship among each buyer and the upstream and down stream suppliers requires an exchange of "current" information that permits real-time visibility into the status of the supply chain, fast identification of abnormal events and other information that permits exception management; [0020] in the semiconductor manufacturing industry in order to procure finished goods (e.g. semiconductor chip), a buyer first orders wafers from a Fab supplier (primary provider); once the work at the Fab supplier is finished, the buyer orders sorting from a Wafer Sort supplier (secondary provider); after the Wafer Sort work is finished, the buyer orders Assembly from an Assembly supplier (3rd provider); and finally, the buyer orders Final Test from a Final Test supplier (4th provider). The supply chain management system is able to perform group order generation for groups of dependent suppliers in the supply chain; [0059] I1 input is a wafer lot).

Yang does not explicitly disclose assigning event elements to the product, wherein the event elements include a plurality of process steps performed by the secondary provider wherein the event elements are stored in a memory unit, and wherein the assigning event elements to the product through the virtual fab includes the secondary provider defining an event element using a first computer system associated with the secondary provider and the primary provider modifying the event element using a second computer system associated with the primary provider.

However, Yang discloses a semiconductor manufacturing environment for manufacturing a wafer lot, that include processing stages of Fab, Wafer Sort, Assembly and Final Test, each performed by a supplier and authorized and controlled by purchase orders. In FIG. 5, the set of purchase orders [P,,,S,, P,,,S,, P,,,S,, P,,,S,] relate to interdependent work steps. The output, O,, is only obtained when all of the orders [P,,,S,, P,,,S,, P,,,S,, P,,,S,] have been executed according to their terms and in sequence from the most upstream order P,,,S, in turn through the orders P,,,S,, P,,,S, to the most downstream order P,,,S,. Furthermore, the downstream orders depend upon the performance of the upstream orders [0059]. In addition, Hagen teaches an adaptive real-time work in progress tracking, prediction, and optimization system for a semiconductor supply chain. In addition Hagen teaches coordinating operations of a semiconductor supply chain with multiple vendors; where each vendor performs tasks before handing off product to next vendor. The tasks may be manufacturing, service, or other tasks. Each task performed by the supply chain vendor may be a combination of multiple steps (e.g., task 1 contains steps s1, s2,

s3…s120) (col. 4, lines 41- col. 5, line 61; see also Fig.1 and associated text). Furthermore, Hagen teaches work in process (WIP) tracking system database; where the WIP database stores a data representation of the semiconductor supply chain, including the current status of WIP in the supply chain (col. 10, lines 6-34). Lastly, Hagen teaches where the WIP tracking system is controlled by a fabless semiconductor provider, the fabless semiconductor provider may follow an ASIC, ASSP or other business model. The fabless semiconductor provider coordinates with the supply chain vendors to establish WIP tracking system protocols, such as contents, format and frequency of WIP updates, the manner to identify individual units of products on the supply chain, etc. The protocols may be simple or complex and may differ from one vendor to the next. Ideally, all vendors would use a common protocol which is directly compatible with the WIP tracking system. In reality, however, each vendor may dictate its own protocol (col. 7, lines 47-63). The Examiner considers the method for communicating with the WIP system by each individual vendor to be performed via an individual in-house business system as being well known and would have been obvious to one of ordinary skill in the art at the time of the invention in order to provide an information channel between vendors and customers in the supply chain. It would also have been obvious to one of ordinary skill in the art at the time of the invention to modify the supply chain management system for semiconductor manufacturing, comprising suppliers for each manufacturing stage as disclosed by Yang to include event elements tasks for the semiconductor supply chain taught by Hagen in order to assign all the required event elements require for completing a stage of the semiconductor manufacturing process in

an efficient and effective manner and in order to optimize the supply chain management process by reducing the impact caused by any unpredictable incidents or errors occurring in the other supply chain by any of the plurality of providers and reduce semiconductor manufacturing cycle time.

Yang further discloses, transmitting information associated with the product throughout a virtual fab, wherein the transmission of information occurs continuously and multi-directionally between the providers through the virtual fab ([0005] exchanging information among buyers and suppliers; [0050] multiple buyers and multiple suppliers are able to exchange information over the internet),

Yang further discloses, and wherein the information is associated with the assigned event elements, and wherein the information includes a time of an event element and a quantity of the product yielded ([0025] lot tracking maintenance such as cycle time, yield analysis, cost reporting each stage of the supply chain; [0085-0087] estimated finished good is calculated based on the standard cycle time of each stage); and wherein the virtual fab includes the first computer system and the second computer system operably coupled to a network ([0070] computer system network for the supply chain management system; see Fig. 9 and associated text);

Yang further discloses, storing at least a portion of the transmitted information in the memory unit ([0072] the processed data is stored in the processed data store which can be communicated to the clients); and

Yang further discloses, providing the portion of the transmitted information to a third computer system associated with a customer in response to a customer request using the network ([0072] the processed data is stored in the processed data store which can be communicated to the clients; [0186] buyer request; see also Figs. 1, 9 computer system network).

As per claims 9 and 10, the Yang/Hagen combination disclose claim 6 as rejected above, where Yang does not expressly disclose "wherein the event elements include process completion at a predetermined check point" and "wherein the event elements of the primary provider and the secondary provider comprise product process steps, the event elements track the product through the virtual fab". However, Hagen teaches WIP update's that includes the entire sequence of steps executed since the last update (typically including quantity and time of completion) rather than just listing the current step. This type of WIP update may be referred to as a "transaction history" update. In this step the completion of every step typically is time stamped (col. 7, lines 3-9; see also col. 10, lines 35-56 advance notice engine). Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the semiconductor manufacturing supply chain system of Yang to include WIP updates as taught Hagen in order to track completion time for all event elements so that wafer fabrication flow can move on smoothly and

therefore reducing the semiconductor manufacturing cycle time and will help reduce time delays, costs of goods and services.

As per claim 11, Yang further discloses wherein the information includes product lot identification and product lot history ([0024-0025] lot tracking stores the genealogy of a lot and lot history; [0165] lot tracking).

As per claim 12, Yang further discloses wherein the step of providing uses a service system interface for communicating between a computer system associated with the customer and a computer system associated with the semiconductor fab ([0179] onscreen operations or other i-commerce methods of communication provided to buyers and suppliers; [0070] supply chain management service).

As per claim 14, Yang further discloses wherein the primary provider is a semiconductor fab facility ([0020] buyer and supplier within the semiconductor manufacturing industry).

As per claim 15, Yang further discloses wherein the secondary provider is a sub-contractor ([0020] assembly supplier).

As per claim 16, Yang further discloses wherein the primary provider is a semiconductor design house ([0019] IC-design house deals with multiple suppliers that provide various outsourcing functions at different supplier stages).

As per claim 17, Yang further discloses wherein the secondary provider is a equipment vendor ([0020] assembly supplier).

As per claims 18 and 19, the Yang/Hagen combination disclose claim 6 as rejected above, but do not expressly disclose "wherein the event elements of the primary provider and secondary provider comprise product process steps to occur at the secondary provider, the event elements track the product through the virtual fab" and "wherein the event elements include manufacturing process checkpoints".

However, Yang discloses semiconductor manufacturing environment processing stages including fab, wafer sort, assembly and final test [0059], and generating purchase orders for multistage processing in order for work to be performed through the stages by authorization and specifying the terms and conditions ([0062, 134] see data integrity unit 88-6 on Fig. 11). In addition, Hagen teaches wherein the each task performed by the supply chain vendors may be a combination of multiple steps. Some of phases of the semiconductor manufacturing may be divided among vendors in any number of ways (col. 5, lines 38 – col. 6, line 19). The fabless semiconductor provider coordinates with the supply chain vendors to establish WIP tracking system protocols, such as contents, format and frequency of WIP updates, the manner to identify individual units of products on the supply chain, etc. The fabless semiconductor provider receives the WIP updates from supply chain vendors. The data contained in the WIP updates may be relevant to different customers, different products and/or different orders for a product. The WIP

tracking system processes the WIP updates received from the supply chain vendors and generates various WIP reports, which are made available to supply chain vendors and customers, as well as for internal use, as applicable (col. 7, line 48 – col. 8, line 5). Lastly, Hagen teaches a consistency checking module for consistency checking the WIP updates (Claim 28). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the semiconductor manufacturing supply chain system of Yang to include the WIP tracking system as taught by Hagen in order to mange and track event elements of the wafer fabrication in order to reduce and errors or problems that may affect the semiconductor manufacturing cycle time, which will help reduce time delays, costs of goods and services.

As per claim 23, Yang further discloses wherein the transmitting information includes the primary provider transmitting a process parameter of a process performed by the secondary provider to the secondary provider based on the received information ([0059] the downstream orders depend upon the performance of the upstream orders. Typically, in the semiconductor manufacturing industry, the output at any stage is a variable, for example, varying as to supply chain parameters such as quantity, quality and delivery time. Accordingly, orders with downstream suppliers often need to be conditioned upon the results of one or more upstream suppliers).

Claims 21, 22 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yang in view of Hagen in further view of Arackaparambil et al. (US 2002/0156548 A1, hereinafter Arackaparambil).

As per claim 21, Yang discloses a computer readable medium including computer-readable instructions ***for tracking and managing*** a plurality of product and information through a semiconductor manufacturing environment the computer-readable instructions comprising:

instructions ***for establishing*** a virtual fab with a plurality of entities, each entity associated with an internal process to a semiconductor fab or an external process to the semiconductor fab ([0036, 71] Fig. 10 depicts a software block diagram for the supply chain management system; [0070] the application server 95-1 and the application server 95-2 execute programs for performing supply chain management in the multiple buyer, multiple supplier environment, see also Fig. 9 and associated text);

and wherein at least one of the plurality of entities is associated with an internal process and at least one of the entities is associated with an external process ([0014, 59, 67] global processor executes data integrity processes to improve the reliability of the supply information; [0069-71] Fig. 8 depicts a supply chain management system operating in an environment of multiple buyers and multiple supplier; for the semiconductor manufacturing industry the multistage supply chain includes a plurality of stages organized functionally);

Yang does not expressly disclose "instructions ***for*** assigning ***a plurality of event elements for tracking*** the product through the plurality of entities of the virtual fab, wherein a plurality of event elements are provided for each of the plurality of entities of the virtual fab."

However, Yang discloses base lot field is a derived number indicator used for tracking the lot for a buyer through all the suppliers [0080] and lot tracking report [0136]. Yang also discloses a semiconductor manufacturing environment for manufacturing a wafer lot, that include processing stages of Fab, Wafer Sort, Assembly and Final Test, each performed by a supplier and authorized and controlled by purchase orders. In FIG. 5, the set of purchase orders [P,,,S,, P,,,S,, P,,,S,, P,,,S,] relate to interdependent work steps. The output, O,, is only obtained when all of the orders [P,,,S,, P,,,S,, P,,,S,, P,,,S,] have been executed according to their terms and in sequence from the most upstream order P,,,S, in turn through the orders P,,,S,, P,,,S, to the most downstream order P,,,S,. Furthermore, the downstream orders depend upon the performance of the upstream orders [0059]. In addition, Hagen teaches an adaptive real-time work in progress tracking, prediction, and optimization system for a semiconductor supply chain. Hagen also teaches coordinating operations of a semiconductor supply chain with multiple vendors; where each vendor performs tasks before handing off product to next vendor. The tasks may be manufacturing, service, or other tasks. Each task performed by the supply chain vendor may be a combination of multiple steps (e.g., task 1 contains steps s1, s2, s3…s120) (col. 4, lines 41- col. 5, line 61; see also Fig.1 and associated text). Hagen also teaches,

generating an advance notice and making them available to a downstream vendor based on the updated data representation and a pre-determined rule (Claims 2, 11). Furthermore, Hagen teaches work in process (WIP) tracking system database; where the WIP database stores a data representation of the semiconductor supply chain, including the current status of WIP in the supply chain (col. 10, lines 6-34). Lastly, Hagen teaches where the WIP tracking system is controlled by a fabless semiconductor provider, the fabless semiconductor provider may follow an ASIC, ASSP or other business model. The fabless semiconductor provider coordinates with the supply chain vendors to establish WIP tracking system protocols, such as contents, format and frequency of WIP updates, the manner to identify individual units of products on the supply chain, etc. The protocols may be simple or complex and may differ from one vendor to the next. Ideally, all vendors would use a common protocol which is directly compatible with the WIP tracking system. In reality, however, each vendor may dictate its own protocol (col. 7, lines 47-63). The Examiner considers the method for communicating with the WIP system by each individual vendor to be performed via an individual in-house business system which being well known and would have been obvious to one of ordinary skill in the art at the time of the invention in order to provide an information channel between vendors and customers in the supply chain system. It would also have been obvious to one of ordinary skill in the art at the time of the invention to modify the supply chain management system for semiconductor manufacturing, comprising suppliers for each manufacturing stage as disclosed by Yang to include event elements tasks for the semiconductor supply chain taught by Hagen in order to assign all the required event

elements require for completing a stage of the semiconductor manufacturing process in an efficient and effective manner and in order to optimize the supply chain management process by reducing the impact caused by any unpredictable incidents or errors occurring in the other supply chain which will therefore reduce the semiconductor manufacturing cycle time.

Yang further discloses instructions ***for a communications interface*** for interacting with a enterprise control entity and the plurality of event elements ([0021] i-commerce onscreen operations or other methods of communication; [0050] internet communication means between buyers and multiple suppliers, see Fig. 1 and associated text);

Yang does not expressly further discloses "instructions ***for controlling the product quality***, wherein the product quality may be controlled by at least two of the plurality of entities."

However, Yang discloses supply chain management system containing a multi-lot processor with communication means via internet [0068-69]; supply chain parameter such as quantity, quality, and delivery time [0059]; and data integrity unit includes a data checking unit and data cleansing to improve quality of data [0092-93]). Yang also discloses where downstream orders depend upon the performance of the upstream orders and where the output at any stage is a variable such as quality [0059]. In addition, Hagen teaches where advance notices enable quality information exchange between vendors in

the supply chain (col. 3, lines 48-52). Furthermore, Arackaparambil teaches a quality management component (QMC) which provides quality analysis and flexible data collection. It is able to determine corrective manufacturing tactics in order to ensure conformance to predetermine business rules [0083]. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the Yang/Hagen combination to include a quality management component as taught by Arackaparambil in order to allow providers, operating the system, a component that monitors quality during the manufacturing production process in order to make sure that the information received is within a compliance standard.

Yang further discloses instructions ***for determining a future location*** for the product and the associated information through the virtual fab via the enterprise control entity ([0165-167] lot tracking data used for all the production; [0025] lot tracking maintenance such as cycle time, yield analysis, cost reporting each stage of the supply chain; [0085-87] estimated finished good is calculated based on the standard cycle time of each stage; see also [0018] and Fig. 23 Work in progress inventory report); and

Yang further discloses instructions ***for amending the associated information*** to the recordable medium through the virtual fab ([0023] lot tracking information consists of dynamic data, where data can be changed during the manufacturing processes; [0072] via communication over the internet data is converted via converter and stored in the raw data store).

As per claim 22, Yang further discloses wherein the plurality of entities include:

at least one entity associated with a primary provider manufacturing executing system in the virtual fab ([0010] dominating buyer or dominating supplier); at least one entity associated with a secondary provider manufacturing executing system in the virtual fab ([0010] dominating buyer or dominating supplier); at least one entity associated with a manufacturer of the semiconductor equipment vendor ([0009-10] outsourcing semiconductor manufacturing industry between buyers and suppliers); at least one entity associated with a manufacturer of the sub-contractor ([0173] reporting accuracy among multiple suppliers and multiple buyers and multiple suppliers); at least one entity associated with a manufacturer of the semiconductor design house ([0019] IC-design house deals with multiple suppliers that provide various outsourcing functions at different supplier stages); at least one entity associated with a customer of products being manufactured by the semiconductor fab ([0017, 27] semiconductor manufacturing supply chain; [0069] multistage supply chain environment for multiple buyers and multiple suppliers; [0132-133] multiple supplier branch in a supply chain transaction); and at least one entity associated with engineering support for the either or both of the primary and second manufacturing executing system ([0178] production control engineers and other production control personnel).

As per claim 24, the Yang/Hagen combination disclose claim 6 as rejected above, but do not expressly disclose "the primary provider performing quality control function at the secondary

provider using the information received." However, Yang discloses where downstream orders depend upon the performance of the upstream orders and where the output at any stage is a variable such as quality [0059]. In addition, Hagen teaches where advance notices enable quality information exchange between vendors in the supply chain (col. 3, lines 48-52). Furthermore, Arackaparambil teaches a quality management component (QMC) which provides quality analysis and flexible data collection. It is able to determine corrective manufacturing tactics in order to ensure conformance to predetermine business rules [0083]. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the Yang/Hagen combination to include a quality management component as taught by Arackaparambil in order to allow providers, operating the system, a component that monitors quality during the manufacturing production process in order to make sure that the information received is within a compliance standard.

Examiner has pointed out particular references contained in the prior arts of record in the body of this action for the convenience of the applicant. Although the specified citations are representative of the teachings in the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant, in preparing the response, to consider fully the entire references as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior arts or disclosed by the examiner.

Please note:

A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. See *e.g. In re Collier*, 158 USPQ 266, 267-68 (CCPA 1968) (where the court interpreted the claimed phrase "said ferrule-forming member being crimpable onto said shield means" and held that the shield means was not a positive element of the claim since "[t]here is no positive inclusion of 'shield means' in what is apparently intended to be a claim to structure consisting of a combination of elements." As a courtesy, the Examiner has bolded and italicized the claim language considered as intended use.

Applicant(s) are reminded that optional or conditional elements do not narrow the claims because they can always be omitted. See *e.g.* MPEP §2106 II C: "Language that suggest or makes optional but does not require steps to be performed or does not limit a claim to a particular structure does not limit the scope of a claim or claim limitation. [Emphasis in original.]"; and *In re Johnston*, 435 F.3d 1381, 77 USPQ2d 1788, 1790 (Fed. Cir. 2006) ("As a matter of linguistic precision, optional elements do not narrow the claim because they can always be omitted."). "As a matter of linguistic precision, optional elements do not narrow the claim because they can always be omitted." *In re Johnston*, 435 F.3d 1381, 77 USPQ2d 1788, 1790 (Fed. Cir. 2006)(where the Federal Circuit affirmed the Board's claim construction of "further including that said wall may be smooth, corrugated, or profiled with increased dimensional proportions as pipe size is increased" since "this additional content did not narrow the scope of the claim because these limitations are stated in the permissive form 'may.'").

Functional recitation(s) have been considered but given less patentable weight[1] because they fail to add any steps and are thereby regarded as intended use language. A recitation of the intended use of the claimed invention must result in additional steps. See *Bristol-Myers Squibb Co. v. Ben Venue Laboratories, Inc.*, 246 F.3d 1368, 1375-76, 58 USPQ2d 1508, 1513 (Fed. Cir. 2001) (Where the language in a method claim states only a purpose and intended result, the expression does not result in a manipulative difference in the steps of the claim.).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BOB CHUMPITAZ whose telephone number is (571) 270-5494. The examiner can normally be reached on M-TR: 7:30 AM - 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, JOHN WEISS can be reached on (571) 272-6812. The fax phone number for the organization where this application or proceeding is assigned is 571-270-6494.

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[1] See e.g. *In re Gulack*, 703 F.2d 1381, 217 USPQ 401, 404 (Fed. Cir. 1983)(stating that although all limitations must be considered, not all limitations are entitled to patentable weight.).

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B. C.

Examiner, Art Unit 3629

/JOHN G WEISS/

Supervisory Patent Examiner, Art Unit 3629